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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/647,977

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Barry D. Kuban

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05/13/2008

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EXAMINER

CHENG, JACQUELINE

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

05/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/647,977	Applicant(s) KUBAN ET AL.	
	Examiner JACQUELINE CHENG	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14,16-19,21-26,28-37 and 39-47 is/are pending in the application.
- 4a) Of the above claim(s) 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,16-19,21-26,28-37 and 39-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

2. Newly submitted claim 47 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 47 is directed to an invention that is distinct from the invention originally claimed as the rest of the claims are directed towards an ultrasonic device opposed to an optical device. Also there would be a serious search and examination burden if restriction were not required because the inventions have acquired a separate status in the art in view of their different classification (600/437 vs. 600/476), different fields of search, and the prior art applicable to one invention would not likely be applicable to another invention.

3. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 47 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 3, 5-9, 11-14, 16-19, 21-29, 31-35, 37, 39, 40, and 42-46** are rejected under 35

U.S.C. 103(a) as being unpatentable over Prause (US 6,148,095) in view of Slager (US

5,771,895). Prause discloses a system and method of acquiring blood vessel data in the form of images comprising a catheter and data-gathering and processing devices of a data fusion unit on a programmed computer and a data storage unit (col. 4 line 8-35). The IVUS catheter is withdrawn at a fixed speed while the images are being taken (col. 5 line 5-8). The images can be correlated so as to acquire the data during a certain heart phase of interest. This phase correlation uses an ECG to obtain the heart phase of interest to ensure the images are obtained under consistent conditions (col. 6 line 24-33). To suppress heart and breathing motions in the images a gated image acquisition can be used (col. 11 line 41 - 55). Although Prause does not explicitly disclose using ECG triggered image acquisition this is well known in the art and is often taught as either method can be used. An example of one such teaching is disclosed in Slager. Slager discloses a system and method of obtaining an accurate 3D reconstruction of a blood vessel using an IVUS with rotational transducers and using either ECG gated or ECG triggered data (abstract, col. 5 line 7-28). By using the triggering method instead of the gating method the sequence of cross-sectional ultrasound images can be immediately stacked without having to sort through a bunch of images, discarding the distorted images.

6. Prause also does not disclose that the transducer is adapted to rotate, but it would be obvious to one skilled in the art to use any comparable IVUS system with the system of Prause. Slager discloses such an IVUS system in which the transducers can rotate (col. 6 line 50-55) and

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wherein the rotational orientation can be identified (col. 3 line 50-54). So therefore it would be obvious to one skilled in the art at the time of the invention to combine Slager with Prause to further the utility of Prause to obtain data from any particular desired angle of the blood vessel and to quicken the image stacking time without having to sort through unneeded images.

7. **Claims 4 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Prause in view of Slager, and further in view of Vince (US 6,200,268 B1). Neither Prause nor Slager discloses a plurality of transducers spaced circumferentially, but it would be obvious to one skilled in the art to use any comparable IVUS system with the system of Prause and Slager. Vince discloses such an IVUS system that comprises an array of transducers circumferentially positioned (col. 3 line 50-53) so therefore it would be obvious to one skilled in the art at the time of the invention to combine Vince with Prause and Slager to further the utility of Prause in view of Slager to obtain data from any angle of the blood vessel without having to spend time rotating the catheter to position the transducer in the correct direction.

8. **Claims 10, 30, and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Prause in view Slager, further in view of Dias (US 5,284,148). Neither Prause nor Slager discloses acquiring the blood vessel data when the transducer is rotationally orientated in a predetermined location. However if there is a particular region of interest that one is trying to image, it would be obvious to need to have the transducer rotationally orientated in the correct (predetermined) direction/location. For example Dias discloses a intravascular probe where in

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the probe is rotated to a predetermined position and takes measurements (images) while at that predetermined position (col. 3 line 1-6).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,364,835 B1 to Hossack, US 6,004,270 to Urbano, and US 4,920,413 to Nakamura.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACQUELINE CHENG whose telephone number is (571)272-5596. The examiner can normally be reached on M-F 10:00-6:30.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/

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Supervisory Patent Examiner, Art Unit
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